9449-E

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Cinnabar Environmental Services
Environmental Engineering & Consulting

October 29, 2004
TRB-04-120

USEPA – Region 6
Attn: Ms. Lou Roberts (6EN-AT)
1445 Ross Avenue, Ste 1200
Dallas, TX 75202-2733

Subject: PCB Cleanup Notification
Sequoyah Fuels Corporation

Dear Ms. Roberts:

This letter and the attached PCB Cleanup Plan serve to notify EPA-Region 6 of the intent to remediate soils that contain elevated levels of polychlorinated biphenols (PCB).

The cleanup will be conducted under the regulations as found at 40 CFR §261.61(a) addressing self-implementing cleanup and disposal. We are prepared to wait the 30-day grace period before proceeding to allow your office to review and comment as required under the regulations. However, we would like to proceed sooner if possible, and ask that you consider providing written permission to proceed ahead of that schedule. If this is determined the accelerated schedule is feasible, please notify me of such by phone or email so I can begin the mobilization process, so when the letter arrives we can proceed. We would like to complete the remediation prior to any winter weather if possible.

Please let us know if you require additional information, or wish to discuss this matter. Otherwise, we will continue with the plan as written if we don't hear from you.

Sincerely,

Cinnabar Environmental Services

Tom Blachly
Project Manager

Enclosures

cc: Kelly Burch, Asst. Atty. General of Oklahoma
John Ellis, Sequoyah Fuels Corporation

5121 S. Wheeling Ave. • Tulsa, OK 74105-6421 • TEL: 918.742.0082 • FAX: 918.742.0097 • cestulsa@cinnabar.cc

0449E

PCB Cleanup Plan

Prepared for:

Sequoyah Fuels Corporation
Gore, OK

October 2004

Prepared by:

Cinnabar Environmental Services
Environmental Engineering and Consulting

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PCB Cleanup Plan

Sequoyah Fuels Corporation
Gore, Oklahoma

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PCB Cleanup Plan

Sequoyah Fuels Corporation
Gore, OK

1.0 PROJECT DESCRIPTION

1.1 Overview

The site will undergo remediation (cleanup) of PCB-impacted media by following procedures established under 40 CFR §761.61(a) addressing a self-Implementing on-site cleanup and disposal of PCB remediation waste. This document is being submitted to EPA-Region 6 to notify the agency of the current plans and schedule to conduct the cleanup activities, as well as provide a summary of the background information used in the development of this cleanup plan.

1.2 Background

Sequoyah Fuels Corporation (SFC) will remediate a small area of their closed uranium-processing facility near Gore, Oklahoma for contamination associated with historical leaks of PCB oils. A recent records review conducted during an RCRA Facility Investigation (RFI) revealed that the previous owner, Kerr McGee Corporation, had conducted PCB soil remediation at the site during the 1970s and early 1980s. Records indicate that leakage/spills from rectifier/transformers had led to the remediation, as well as disposal of soils and incineration of the leaking equipment.

Kerr McGee sold the facility to General Atomics Corporation (GA) in 1988. After GA discontinued operations in 1993, the facility began the tasks of developing a Decommissioning Plan for the Nuclear Regulatory Commission (NRC) and a RCRA Facility Investigation for EPA-Region 6. During a subsequent records search, SFC discovered the file information concerning the previous PCB leaks and contamination, and included a sample plan to investigate the current condition of the PCB spill area. Laboratory analysis indicated that PCBs remained in the soils, which was provided to EPA in the RFI Report. Subsequent conversation with the EPA RFI project manager and SFC staff resulted in agreement that the PCB contamination should be addressed in the final

decommissioning approval process, which was underway and anticipated to be completed in the near future. However, the decommissioning-approval process has taken longer than expected, leading to SFC making a decision to proceed with further characterization/remediation of the PCB contamination site rather than waiting until approval of final facility decommissioning.

A site characterization was conducted recently to determine the extent and magnitude of contamination in the PCB spill area. A copy of the site characterization is available at the facility. This remediation plan is based on the findings of the site characterization.

1.3 Site Location

The SFC facility is rurally located on Carlile Road (SH 10) in Sequoyah County, Oklahoma, being completely surrounded by agricultural areas owned primarily by SFC. Carlile Road is a two-lane state highway that connects U.S. Highway 64 and U.S. Interstate 40. The area has a very low population density, with only one homestead within one mile of the facility. The nearest community is Gore, Oklahoma, with a population of less than 700, located approximately 4 miles northwest of the facility (See an *Area Map* in Appendix A).

The facility perimeter is surrounded with security fencing, with additional internal security fencing around the Process Area, in which the PCB-contaminated area is located. Both fences are locked at all times when facility personnel are not present, i.e., during evening, nights, and weekends. There is no access allowed by the pubic as required by the facility NRC License.

The area of PCB impact is located outside of the Main Process Building along the east wall (See *Site Location Map* in Appendix B).

1.4 Site Size

The area of possible PCB impact is relatively small, measuring approximately 56 ft x 36 ft, or 0.05 acres. However, the area of actual excavation to complete the cleanup process is anticipated to be around one-third of this area.

2.0 SITE CHARACTERIZATION

2.1 Sample Procedures

On August 25 and 26, 2004, a site characterization was initiated for the subject site. A sample grid was established over the site on 4-foot centers to identify boring locations, with the location of the grid based on records of historical PCB leaks/spill locations combined with previous soil sample results. Twenty-eight (28) soil borings were then advanced within the grid, with locations based on PCB field screening results.

Soil borings were obtained using a truck-mounted direct-push drilling rig (geoprobe). Borings were advanced to equipment refusal, which occurred anywhere between 10 and 16 feet below ground surface (bgs), with the exception of borings along the eastern boundary, which experienced refusal at approximately 2 feet bgs due to some unknown obstruction, believed to be utility-related. Because of the obstruction, three (3) borings were advanced at an angle to obtain soil samples from beneath the obstruction.

Soil samples were collected continuously from the soil borings using a macro-sampler equipped with 5-foot plastic liners. Sampling equipment was decontaminated prior to commencement of the project, and following each soil boring, or more frequently when conditions warranted, using a non-phosphate detergent and a potable water rinse. Rinse water was collected into drums for subsequent disposal.

All borings were found to be dry, with the exception of one location (I5) in the middle of the site that had saturation at the 7 ft bgs level. Because of the strong odor coupled with the saturation, a sample of the water was collected for analysis. Because saturation was not encountered in other soil borings, coupled with the different lithology of boring I5, it is believed the water encountered was a perched water and did not represent that groundwater was present at the site. As further evidence, saturation was not encountered in the four borings surrounding I5, each located only four feet in the four compass directions.

A mild odor of chlorinated hydrocarbon was detected in a limited number of the soil borings, and was especially strong in one (I5) located near the center of the site. Those soils with stronger odors were generally always included for field analysis, and some for follow-up commercial lab analysis.

2.2 Analytical Procedures

Select soil samples were analyzed on-site during the investigation using EPA Screening Test Method 9078, calibrated to screen for Aroclor 1260, identified earlier as the type of Aroclor that was leaked/spilled at the site. Test Method 9078 has previously been approved by EPA and was found to be an effective tool for identifying PCB contamination during the site characterization investigation. The use of this field screening test methodology allowed the geoprobe sample collection to target a tighter grid pattern for those impacted soils rather than using a larger grid pattern with less definition of the contamination location.

Field screening requires a 10 gram sample size. The field samples were developed by using a clean spoon to scrap and/or dig small portions of the sample into a representative "composite sample". It was reported by the commercial laboratory that a similar method was used to acquire a laboratory sample (discussed below).

Select soil samples analyzed in the field were submitted to Outreach Laboratory in Broken Arrow, Oklahoma for analysis of PCBs (EPA Method 3550B/8082). The purpose of the laboratory analysis was to determine a correlation between an approved standard method and field sample results. In addition, some boring location samples were analyzed twice by both field analysis and the commercial laboratory to determine the repeatability within a sample. A good correlation was established between the field and commercial laboratory results, however, some significant variability was found within individual samples. (Note: The field analysis method had a maximum quantification level of 2,000 ppm, resulting in suspect results for samples containing elevated levels.)

As previously stated, a solvent-type odor was observed in some of the borings. A volatile scan for organic compounds was conducted on two (2) of those samples exhibiting odor (I5-5 & K2-2) utilizing EPA Method 8260B.

The water sample collected from boring I5 was analyzed for PCBs, VOCs, and semi-volatile organic compounds (SVOCs) at the commercial laboratory.

2.3 Nature of Contamination

All sample results from both the field analyses and the commercial laboratory are shown on individual plume maps shown in Exhibit C.

Soil - PCBs

The site characterization showed that elevated levels of Aroclor 1260 were present in area soils. The focus of the characterization was to identify those soils, both horizontally and vertically, that contained PCB concentrations in excess of 50 ppm. Because of limitations of the investigation this was not always possible. Vertical limitations resulted from auger refusal, while utility restrictions along the eastern perimeter of the site limited sampling to the area within the concrete retaining wall. These limitations will be overcome during the remediation operation, as discussed in the cleanup plan.

PCB plume maps of soils in excess of 50 ppm are provided in Appendix C. A map is shown for each 3 foot interval bgs (i.e. 0-3 feet bgs, 3-6 feet bgs, 6-9 feet bgs, and 9 feet-auger refusal bgs). PCB levels were found to range from 2 ppm up to 32,000 ppm in the samples analyzed.

Soil – Other Organics

A scan for volatile and semi-volatile constituents was performed on two soil samples. Results indicated the presence of *trichlorobenzenes* and *methylene chloride.*

Soil samples found to contain *trichlorobenzenes* included I5-5 was found to contain 2,120 mg/kg of 1,2,4-Trichlorobenzene and 1,550 mg/kg of 1,2,3-Trichlorobenzene, while sample K2-2 was found to contain 67.4 mg/kg of 1,2,4-Trichlorobenzene and 65.6 mg/kg of 1,2,3-Trichlorobenzene. Trichlorobenzenes would be expected to be found at the site, as they (as well as other organics) are commonly used to "cut" Aroclors to allow dissolution within the rectifier/transformer.

Methylene chloride was found in the above described samples as well, with sample I5-5 containing 11.6 mg/kg, and sample K2-2 containing 29.2 mg/kg. Methylene chloride was identified during the RFI as being a commonly used industrial solvent used at the facility

during the period when the rectifier/transformer leaks occurred, and was mentioned in a memo addressing a previous PCB remediation effort as having been used to clean the PCB oils from equipment and concrete pads.

Perched Water – PCB and Other Organics

The saturation encountered in boring I5 was found to contain 6.9 and 9.4 mg/l of 1,2,3- and 1,2,4-Trichlorobenzene, respectively. In addition, the PCB levels were found to be 8.13 mg/l, not to be unexpected since it was in the area of highest PCB levels found in soil during the investigation.

3.0 CLEANUP PLAN

3.1 Overview and Schedule

The site will undergo remediation (cleanup) of PCB impacted media by following procedures established under 40 CFR §761.61(a) addressing a self-Implementing on-site cleanup and disposal of PCB remediation waste. SFC plans to implement the plan immediately upon completion of the 30-day required notification period to EPA – Region 6, or upon written approval to proceed from EPA received prior to the 30-day period. It is anticipated that the project will be completed on the following schedule:

Activity	Time to Complete (calendar days)
Safety Training/Setup	3
Excavate Soils	7
Sampling/Analyses	9
Additional Excavation (if necessary]	2
Additional Sampling/Analyses (if necessary)	7
Final Closure Activities	3
TOTAL TIME	22-32 days

3.2 Excavation

Soil targeted for removal will be those with PCB concentrations in excess of 50 ug/g (ppm). Using the soil isopleth maps shown in Appendix C, the following procedural steps will be used to remove the soils:

1) Those soils in the 0-3 foot bgs targeted for removal (contaminated soils) will be marked with an outline using an orange spray paint.

2) Those clean soils in the 0-3 foot bgs that must be removed in order to eventually remove deeper contaminated soils will be marked with a green spray paint.

3) Excavation will proceed using a backhoe to remove the clean soils in the 0-3 foot depth, which will be placed on a plastic liner and covered to await post-cleanup verification sampling.

4) Excavation of contaminated soils will then be conducted using the backhoe. Those soils will be loaded directly into a roll-off meeting the requirements of the DOT Hazardous Materials Regulations at 49 CFR parts 171 through 180, to await subsequent off-site disposal.

5) Further marking and excavation will proceed in the same manner as described above for each of the three additional deeper zones identified in this plan (i.e., 3-6 ft, 6-9 ft, and 9 ft-augur refusal bgs).

6) Sampling of the excavated clean soils and contaminated soils will be conducted during the excavation process according to the procedures described in 40 CFR §761.61 Subpart R.

7) Following excavation of targeted soils, sampling and analysis of those remaining soils will be conducted utilizing field test procedures (as described in Section 2.2). Any soils found to exceed the targeted range will be removed and placed in the roll-off container with the other contaminated soils.

8) Those soils located along the eastern border of the excavation will be dealt with in the following manner: Excavation will proceed until field testing indicates that those soils remaining contain PCB levels within the targeted range. In the event that it becomes necessary to remove utility-related structures to complete the removal of contaminated soils, those items will be so removed and stored on impermeable liners to await testing. Such testing will be completed by those procedures outlined in 40 CFR §761.61 Subparts O and/or P to determine whether such materials must be disposed on or off-site.

9) Those soils located along the bottom of the excavation will be removed until field test results indicate the targeted range has been met. If

during this removal process, groundwater is found to seep into the excavation, the groundwater will be sampled and analyzed for PCB levels using EPA .approved methods.

3.3 Cleanup Verification

The excavation will be covered with an impermeable plastic sheeting following completion of excavation activities. Cleanup verification sampling will be conducted immediately to determine whether remaining soils meet the target cleanup levels as described in 40 CFR §761.61(a)(4). The "target" cleanup level is ≤25 ppm of PCB, which would allow the site to be closed with no restrictions for a low occupancy area. However, if those levels of cleanup are determined to be unachievable or cost prohibitive, the overall objective is to cleanup the site to levels allowed by the regulations, with or without site restriction.

Sampling and analytical testing procedures will follow those outlined in 40 CFR §761.61 Subpart O. Collected samples will be manifested and delivered to a commercial laboratory certified in Oklahoma for chemical extraction and analytical analysis using Method 3500B/3550B.

If laboratory results indicate that soil PCB levels exceed the target cleanup levels, further excavation shall be conducted, followed by further sampling and testing as described above, until the entire site meets the targeted levels.

In addition, those "clean" soils that were accumulated during remediation activities will be sampled and analyzed to determine final disposal options. Sampling of the soil pile(s) will be conducted by utilizing procedures described in 40 CFR §761.61 Subpart R.

3.4 Disposal

The contaminated soils will be transported by a licensed waste hauler to an off-site disposal site. Transport will involve hauling of bulk PCB remediation waste in accordance with DOT Hazardous Materials Regulations at 49 CFR parts 171 through 180. The current plan is to dispose of the material in a hazardous waste landfill permitted by EPA under section 3004 of RCRA. SFC will provide written notice to the disposal site of the

quantity and highest concentration of PCBs to be shipped at least 15 days prior to the first shipment.

In addition, those "clean" stockpiled soils accumulated during excavation will be disposed of based on the sample results discussed in section 3.3. If the soils are found to contain PCB levels less than the target cleanup goal, they will be placed back into the excavation for final disposal, unless soils within the excavation are found through cleanup verification analysis to contain PCB levels below 25 ppm, in which case the soil will be sent to a Subtitle D municipal solid waste landfill approved for accepting such material. This "alternative" disposal action would be taken to avoid having to put property deed and storage restrictions (cap) on the remaining soils, unnecessarily. The municipal landfill would be given 15 days notice prior to shipping of the material.

3.5 Site Closure

Final PCB-contamination site closure will be based on the remediation levels achieved during site cleanup. As stated earlier, the goal is to achieve a cleanup levels that results in no restrictions for a low occupancy area, i.e., 25 ppm. In the event this level of remediation is achieved, the excavation will be filled in with native soils upon completion of the project.

If the site cannot be cleaned to the "no restrictions" level, resulting in allowing bulk PCB remediation wastes to remain at the site, the property deed will be modified as required in 40 CFR §461.61(a)(8). In addition, the following steps will be taken to complete the closure process:

1) If cleanup levels achieved are >25 ppm and ≤50 ppm, the area will be secured by a fence and marked with a sign including the M_L mark.

2) If cleanup levels achieved are >50 ppm and ≤100 ppm, the area will be covered with a cap meeting the requirements of 40 CFR §461.61(a)(7).

4.0 CERTIFICATION

This section serves to certify that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the cleanup site, are on file at the location designated below, and are available for EPA or State inspection. Site characterization procedures used an alternate laboratory analysis method (EPA-approved) along with approved laboratory methods to help expedite the characterization process as described in this plan. The alternate method has undergone a comparison study which exceeds requirements of subpart Q of 40 CFR §761.61, for which records are located at the site.

Location of Records: Sequoyah Fuels Corporation
P.O. Box 610
Gore, OK 74435

Party Representing the Site Owner (Sequoyah Fuels Corporation):

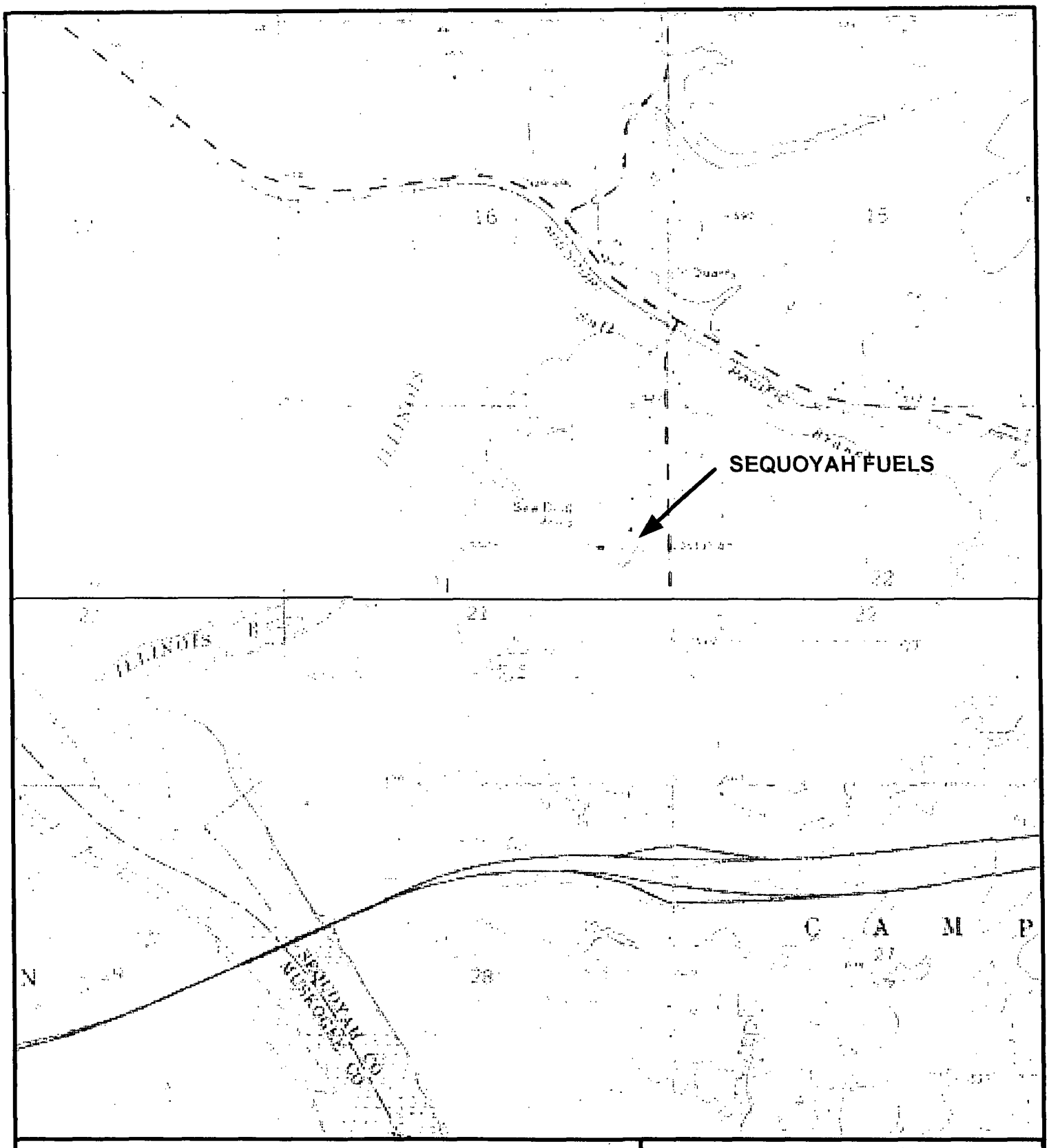
John A Ellis — 11/1/04

Mr. John Ellis, President — Date

Party Representing the Company Conducting the Cleanup (Cinnabar Environmental Services):

[signature] — 10-28-04

Mr. Derek Blackshare, P.E., President — Date



U.S.G.S. TOPOGRAPHIC MAP
STIGLER NE & GORE QUARDANGLES
SEQUOYAH COUNTY, OKLAHOMA

0 1
APPROXIMATE SCALE (MILES)

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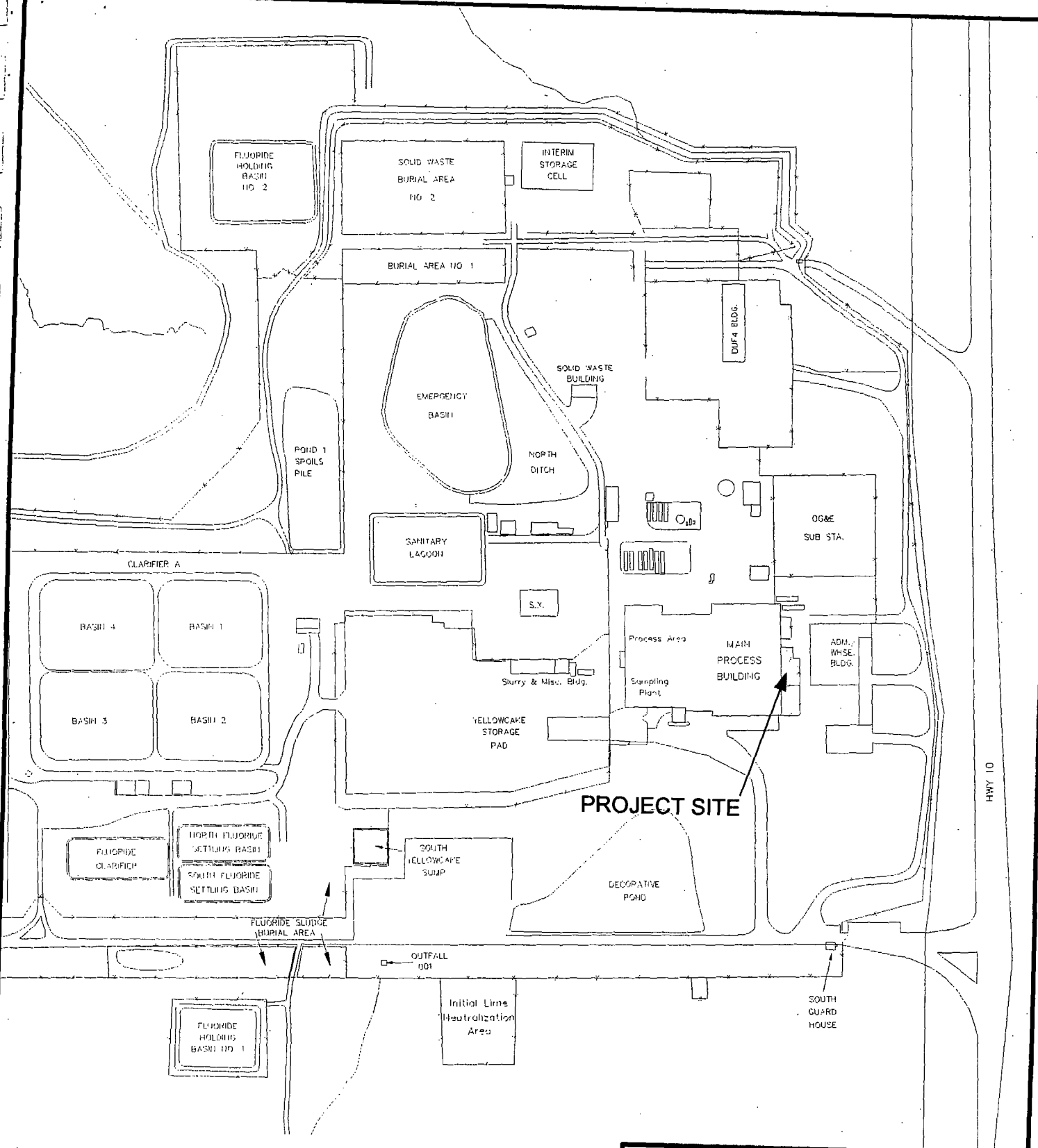
AREA MAP
Sequoyah Fuels Corporation
Gore, Oklahoma

PROJECT NO.: 543-04 DATE: 10/28/04 BY: TRB



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NOT TO SCALE

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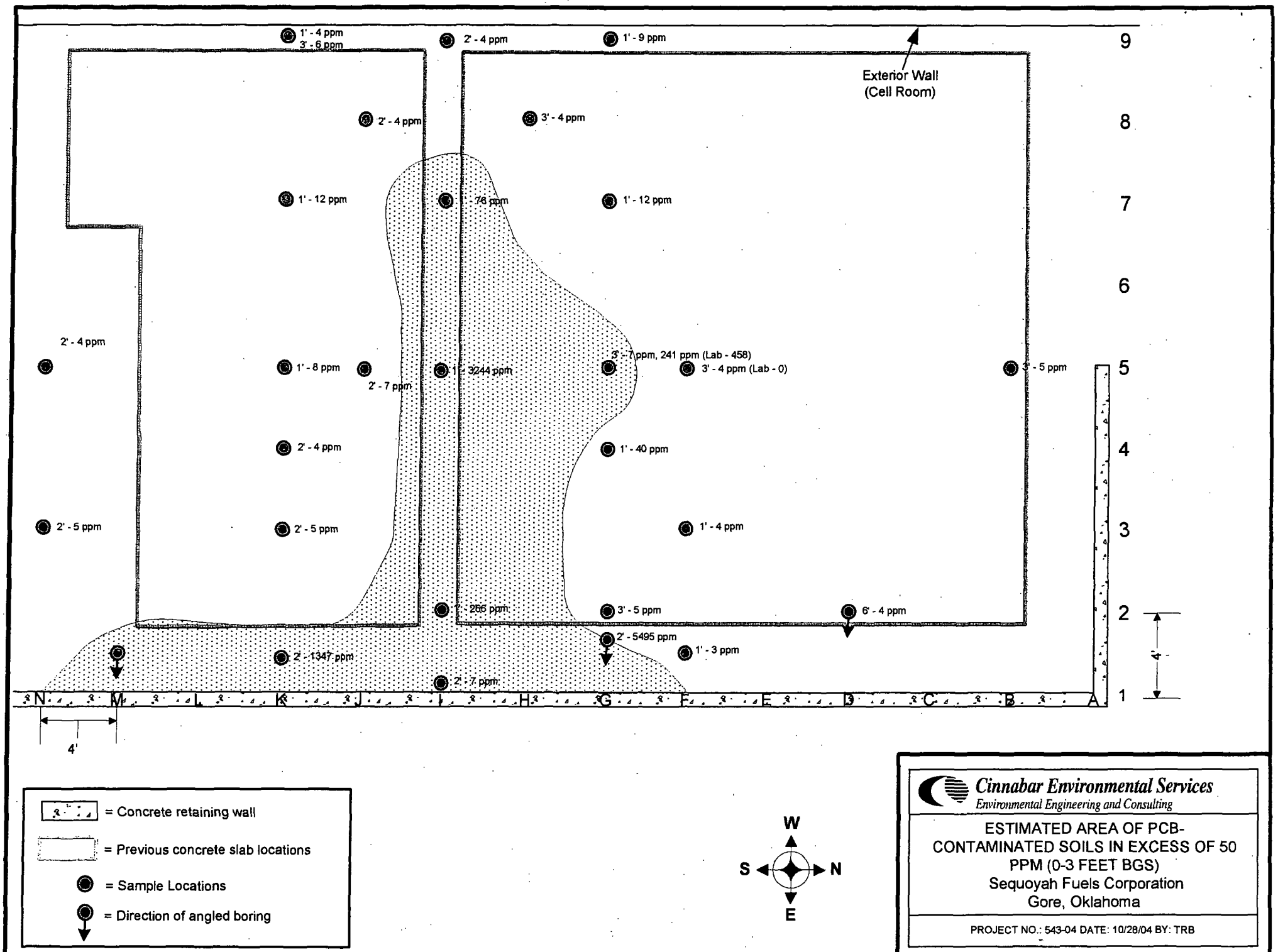
SITE LOCATION MAP
Sequoyah Fuels Corporation
Gore, Oklahoma

PROJECT NO.: 543-04 DATE: 10/28/04 BY: TRB



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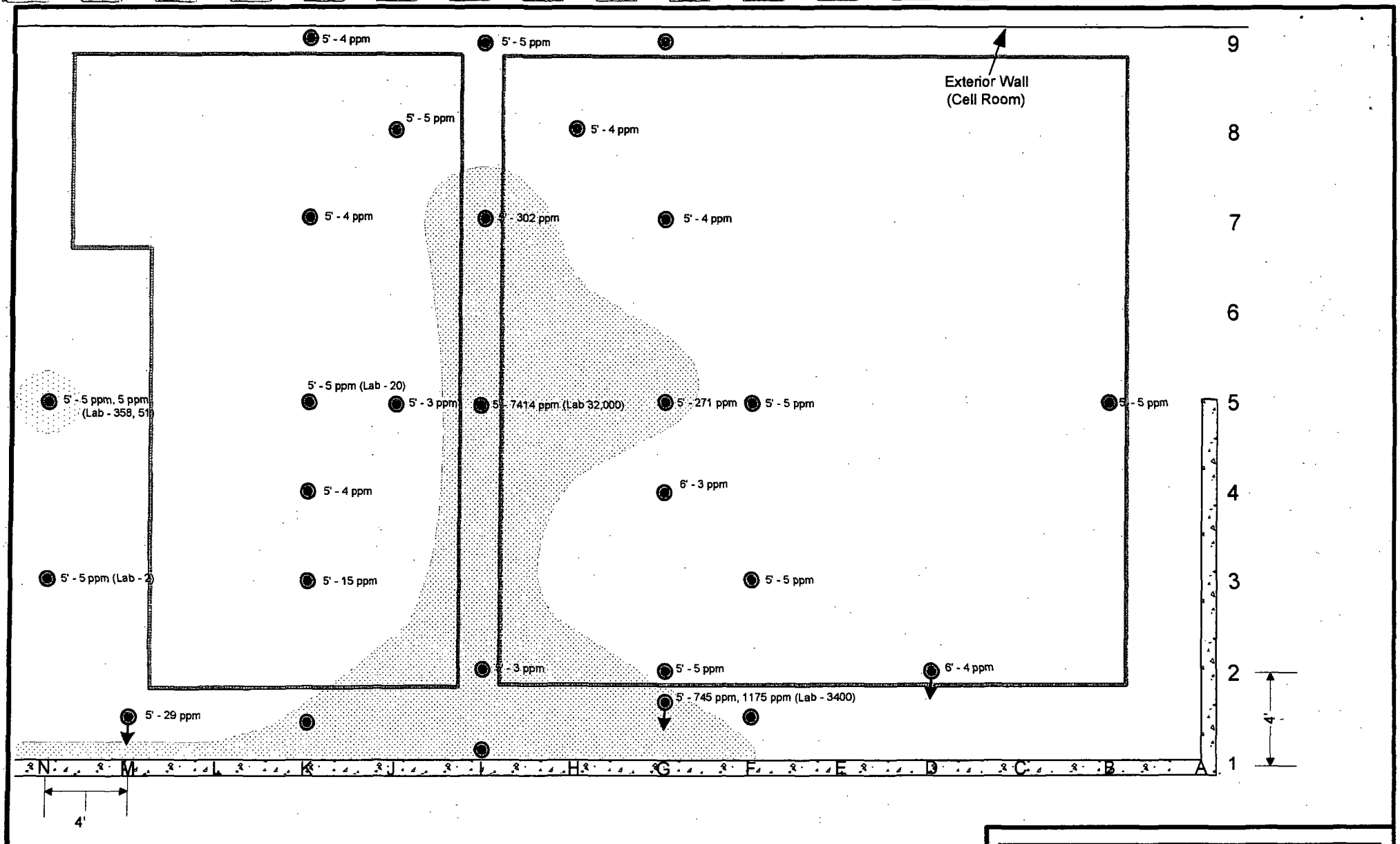
Environmental Engineering and Consulting

ESTIMATED AREA OF PCB-CONTAMINATED SOILS IN EXCESS OF 50 PPM (0-3 FEET BGS)
Sequoyah Fuels Corporation
Gore, Oklahoma

PROJECT NO.: 543-04 DATE: 10/28/04 BY: TRB



= Concrete retaining wall

= Previous concrete slab locations

= Sample Locations

= Direction of angled boring

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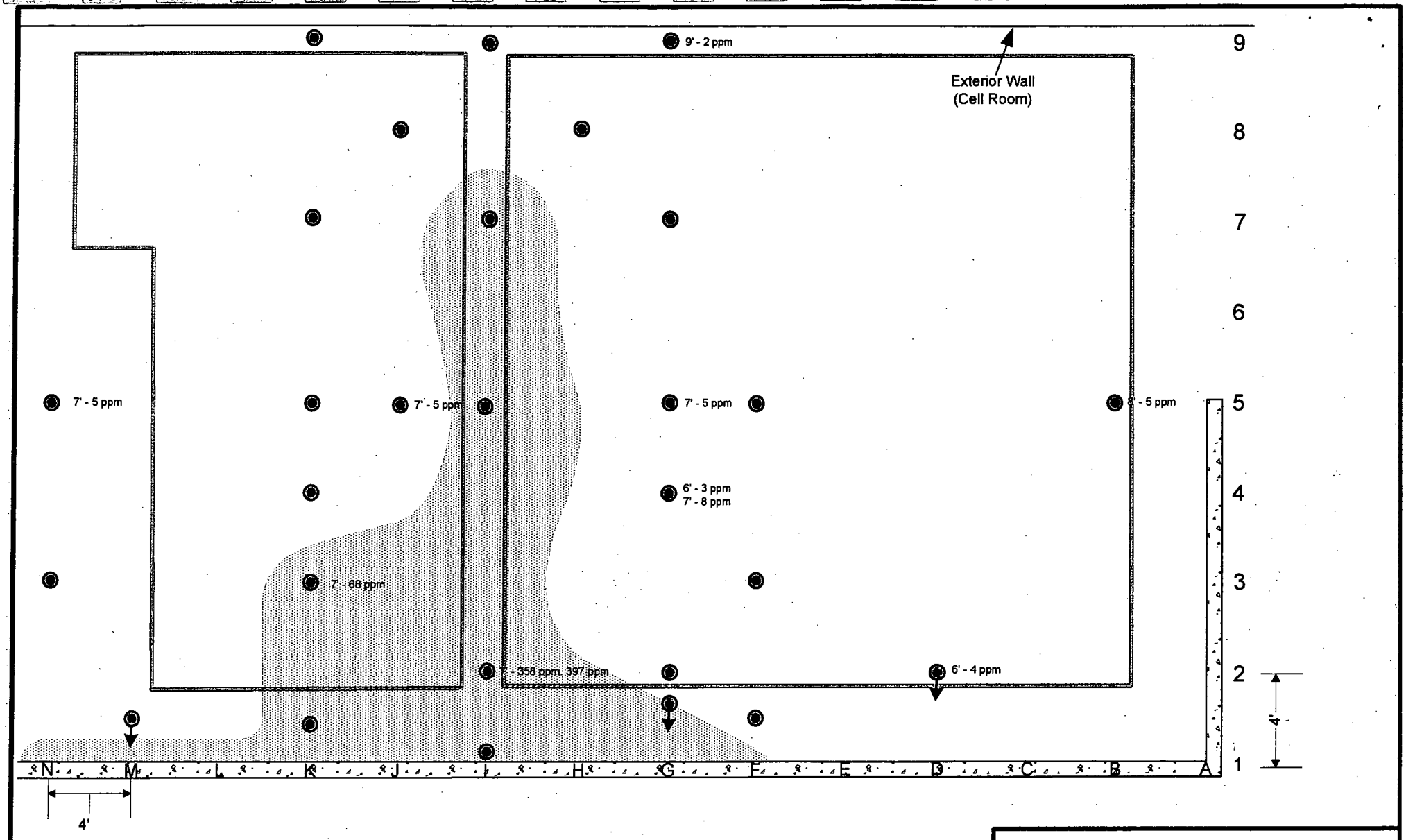
ESTIMATED AREA OF PCB-CONTAMINATED SOILS IN EXCESS OF 50 PPM (3-6 FEET BGS)
Sequoyah Fuels Corporation
Gore, Oklahoma

PROJECT NO.: 494-04 DATE: 08/27/04 BY: JBO



= Concrete retaining wall

= Previous concrete slab locations

= Sample Locations

= Direction of angled boring

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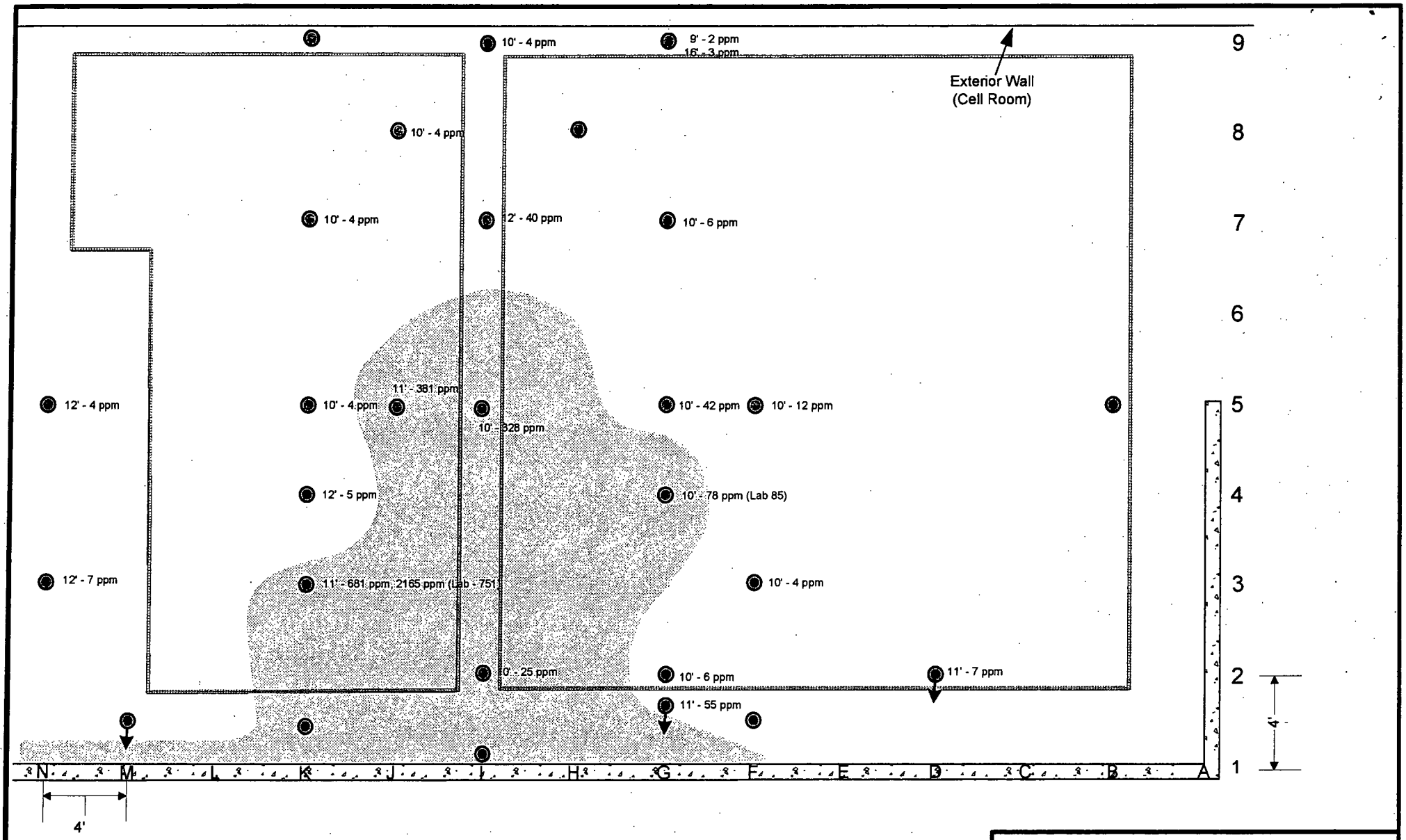
ESTIMATED AREA OF PCB-CONTAMINATED SOILS IN EXCESS OF 50 PPM (6-9 FEET BGS)
Sequoyah Fuels Corporation
Gore, Oklahoma

PROJECT NO.: 543-04 DATE: 10/28/04 BY: TRB



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ESTIMATED AREA OF PCB-CONTAMINATED SOILS IN EXCESS OF 50 PPM (9-12+ FEET BGS)
Sequoyah Fuels Corporation
Gore, Oklahoma

PROJECT NO.: 543-04 DATE: 10/28/04 BY: TRB